

METHOD AND SYSTEM FOR ADAPTIVELY TRAINING TIME DOMAIN
EQUALIZERS

ABSTRACT

A minimum mean square error linearly constrained fast algorithm for adaptive training of a Time Domain Equalizer (MLC-TEQ) is provided. A fast adaptive algorithm of the present invention may be used to obtain Finite Impulse Response (FIR) filter coefficients for Time domain Equalizer (TEQ) used in Discrete Multitone (DMT) based applications, such as ADSL, for example. The TEQ coefficients obtained by the algorithm of the present invention shortens the overall effective discrete time channel impulse response length within a given target length (e.g., symbol prefix length for DMT application). Advantages of the proposed data aided adaptive algorithm may include providing the TEQ filter coefficients with near-optimal performance; having low computational requirements, having fast convergence, and exhibiting attractive stability properties. Other advantages may also be realized by the present invention and variations thereof.